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Lisa Brown Jasa
University of Nebraska-Lincoln, ljasa@unlnotes.unl.edu

CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

No. 96-25
Nov. 8, 1996

CPMU Dec. 2-4 in Kearney

Viable site specific management, factors influencing soil applied herbicides and insect resistance management are among a few of the topics selected for the annual Crop and Pest Management Update Conference to be held Dec. 2-4 at the Kearney Ramada Inn.

The three-day conference will feature guest speakers from Nebraska agribusiness and the University of Nebraska Institute of Agriculture and Natural Resources. CPMU is designed for agricultural professsionals, including dealers, applicators, crop consultants, extension educators, seed company and chemical company employees, farm managers and Natural Resource District and Natural Resources Conservation Service personnel. Continuing education credits for the Certified Crop Advisor program have been applied for.

Other conference topics will include research on alternate crops, late season diseases of corn and soybeans, the Internet as an agronomic information center, surfactants, soybean growth and development, comparing hybrids with a yield monitor, precision farming update, and high efficiency irrigation.

The meeting will start at 1 p.m. Dec. 2 and end at noon Dec. 4. The registration fee is $125, which includes two dinners, a lunch and refreshments. Preregistration is requested by Nov. 22. For more information and to preregister contact Ralph Anderson, Buffalo County Extension Office, 1400 E. 34th St., Keaney NE 68847-3998. For room reservations contact the Ramada Inn at 800-248-4460.

CPMU is sponsored by University of Nebraska Cooperative Extension, Farmland Industries and the Nebraska Independent Crop Consultants Association.

Bob Wright, Extension Entomologist
South Central District

It's your turn!

Yes, it's that time of year again when we ask you to sit down and share your suggestions with us. The annual *CropWatch* readership survey is enclosed on pages 9-10. The more we know about your needs and interests and how you use *CropWatch*, the better we can address your concerns.

We're listening, so please complete the survey and mail it back postage-paid.

This *CropWatch* features a bevy of meetings and educational opportunities so you can hear the latest research results, sharpen production and marketing skills and learn about new programs.

The last issue of *CropWatch*, due in mid December, will feature an index, information on the Crop Revenue Coverage plan, and an update on planning for and planting spring seeded crops.

Use certified soybean seed to avoid diseases

It has been a good year for soybean production; however, two diseases present this year may produce problems next year. If your field was diagnosed with Sclerotinia stem rot or soybean cyst nematode the seed you may be saving for next year's planting has a high probability of being contaminated with overwintering structures of these pathogens.

Sclerotinia stem rot (*Sclerotinia sclerotiorum)* produces a white cottony growth (mycelium) on blossoms, stems and pods. Sclerotia, the hard black overwintering structures, develop later in the mycelial mat. They also develop inside the stem and are harvested right along with the seed. Sclerotia vary in size but many are approximately the same size as the soybean seed and can be planted with the seed next spring. The Soybean Compendium states that "Seed contaminated with sclerotia is the most likely means of introducing the pathogen into previously uninfested fields." Once the pathogen is established in the field it is difficult to control.

The gross symptoms of a soybean cyst nematode (*Heterodera schachtii*) infection are stunted yellow plants with discolored roots and decreased nodulation. The symptoms are often confused with nutritional deficiencies. The cyst nematodes are attached to the root and are smaller than the nodules. They can be easily dislodged and adhere to small soil balls (peds). The peds are about the same size as soybean seeds and can become mixed with seed during harvest. They provide a source of primary infection next spring.

Thorough cleaning procedures are necessary to remove both sclerotia and infested soil peds. In the case of a soybean cyst nematode problem, a spiral cleaner will be necessary to adequately remove infested soil peds. If you had one of these disease problems this year your safest course of action is to buy certified seed next year rather than risk infesting fields with yield robbing diseases.

Jane A. Christensen
Extension Assistant, Plant Pathology

Get to know the good, the bad, and the bugly

Sometimes distinguishing the good insects from the bad pests in your field isn't easy. It may be even harder to know when to send out the scouting party, when the pests are most vulnerable, and the best time to meet them at high noon. If only the pests dressed in black.

Add a little punch to your attack by taking a new distance education course offered by the Department of Entomology at the University of Nebraska. *The Good, the Bad and the Bugly*, an eight-week college course on basic entomology and field crop pest management, will be offered from Jan. 13 to March 7 via internet or videotape, both of which you can use in the comfort of your home.

Leon Higley, UNL associate professor of entomology, will cover insect biology and identification, pest management tactics, sampling, thresholds, pesticide properties, biological control and environmental risk. This class will address the issues as they apply to practical questions and be directed to farmers, crop consultants, pesticide applicators, vocational agricultural teachers and college students.

The course consists of 24 50-minute sessions, which will be offered three times a week over an eight-week period. The sessions will be provided by streaming video and audio over the internet or by videotape. Internet sessions will be available live and recorded classes will be available for one week. Reading assignments, problem sets, and additional learning opportunities will enhance lecture material. Laboratory sessions may be possible through a visit to UNL or one of its research and education centers (Scottsbluff, North Platte, Clay Center, Concord). Individuals taking the course for credit can submit assignments via E-mail. A web page will be available via internet with additional resources and an E-mail discussion group will be available to students.

For those taking the course by videotape, the first tapes will arrive at your home by Jan. 21 and then each week for the next seven weeks. A whole week of sessions will be included on each videotape, the cost of which is included in the registration.

Students can register for three hours of college credit or take it noncredit. Costs for the college credit course are $225 tuition plus a $100 distance education fee and $25 for materials ($350 total). Costs for the noncredit course are $300 plus $25 for materials ($325 total). (If you have access to the internet, you can download the handouts and save the materials fee.) Certified Crop Adviser (CCA) continuing education credits also may be available. For more information about the course or how to register, contact Betty at 1-800-755-7765 or write:

The good, the bad and the bugly
University of Nebraska
P.O. Box 830918
Lincoln, NE 68583-0918

If you're interested in taking the course via internet, the software needed to access the class — Xing Streamworks Browser — is available free and can be downloaded from a UNL web page. The following hardware recommendations also should be considered prior to the start of class. A 28.8 bps modem is recommended.

PC recommendations

- 486-33 mhz CPU, 8 MB RAM (16 MB RAM recommended)
- 256-color VGA card and monitor (not essential for monitoring the audio)
- Audio card, such as Sound Blaster 16, speakers or headphones
- Windows 3.1, 3.11, or 95

MacIntosh recommendations:

- 68040 (Quadra) CPU, 8 MB RAM (16 MB RAM recommended)
- 256-color display
- System 7.1 or higher.

CROPWATCH

1996 University of Nebraska

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Lisa Brown Jasa, Editor

For more information about a particular subject, write the authors at the addresses below:

UNL Department of Entomology
202 Plant Industry Bldg.
Lincoln, NE 68583-0816

UNL Department of Plant Pathology
406 Plant Science Bldg.
Lincoln, NE 68583-0722

UNL Department of Agronomy
279 Plant Science Bldg.
Lincoln, NE 68583-0918

UNL Department of Agricultural Meteorology
236 L.W. Chase Hall
Lincoln, NE 68583-0728

Grid soil sampling offers challenges, costs; rewards come in more specific information

In five to seven years, more detailed sampling will probably be the norm rather than the exception.

With the recent interest in Site Specific Management (SSM) many producers are asking about grid sampling. There is a mystique about site specific management, yield mapping and grid soil sampling because they are new technologies. The primary thing to realize is that we simply want to use the technology to gather more information and make better decisions.

The starting point for many producers using site specific management will be yield monitoring and mapping. Many factors besides nutrients affect crop yields including soil depth, other soil chemical and physical properties, disease, weeds, insects and water status (too much or too little). I would suggest that for many producers, the place to start in site specific management is by mapping soil characteristics -- elevation plus soil properties. Eventually soil maps, yield maps and other information will become different data layers in a Geographic Information System (GIS).

The current procedures for proper soil sampling are outlined in the University of Nebraska Extension NebGuide G91-1000, *Guidelines for Soil Sampling*. Bulk sampling provides some information, but we know grid sampling provides much more. The increase, however, is at a cost.

Before you decide whether to implement grid sampling, you may need to make a paradigm shift — a change in how you think about soil sampling. Soil testing was developed to determine if a nutrient deficiency existed, how severe it was and how much fertilizer was needed to improve productivity. Soil samples were to be taken, fertilizer recommendations were to be followed for four or five years, then the soil was to be resampled. Recently most producers, ag consultants and fertilizer dealers have been sampling annually, which probably is not necessary. **Soil sampling frequency should be based on the expected changes in the soil test parameter being measured.** For many soil tests, retesting after four to five years is adequate. For others like organic matter, cation exchange capacity, or pH, 10 or 20 years may be a sufficient sampling frequency.

From our variable rate fertilizer research we know that a good bare soil photo map and directed sampling can provide a detailed organic matter map that is good for a lifetime. That's right, organic matter is not going to change significantly over 15 to 20 years. For phosphorus, potassium and zinc, sampling every five years should be adequate because soils take several years to respond to fertilizer additions. The major problem in sampling is for mobile nutrients like nitrate and sulfate which may require yearly testing. This recommendation would apply whether sampling is based on whole field management or site specific management. The challenge in both systems will be to determine the impact and interaction of other factors including uniformity or lack of it, sampling pattern, number of samples, and sampling depth as influenced by tillage.

Soil sampling for site specific management will cost more than that for whole farm management; however, the additional information should be helpful in either decreasing inputs or applying inputs where there is more response and economic return.

In the past, sampling fields yearly for a complete soil analysis (if the true cost were paid) would be about $20 for 40 acres or $0.50 an acre. If you only need one organic matter map in a lifetime you only have to do one intensive sampling for that soil property. For pH, taking samples every 10 years may be okay. A strategy of only sampling 20% of your land area per year and sampling on a two-acre grid for potassium, phosphorus and zinc might cost $100 ($5 x 20 samples). The $5 cost would be for a single extractant like AB-DTPA or Mehlich III, both of which are not calibrated for Nebraska. You can see why labs are interested in using 'universal extractants', however, as they consider the implications of site specific sampling.

The above cost of grid sampling $2.50 per acre (for our 40-acre field), once in five years makes the cost $0.50 per acre per year. There will be additional cost for an initial organic matter map, pH and for nitrate (plus sulfate for sandy soils), so the final cost may be nearer $2 per acre per year. It probably is not unreasonable to consider that future soil sampling costs will be at $2-3 per acre per year. However, because the variability can be mapped and managed, soil sampling should return more than $2-3 per acre per year in improved use of herbicide, fertilizer or lime.

If you are not going to do grid sampling, should you give up on bulk sampling? No. There is a place for uniformly sampling fields, but it is limited. Grid sampling has shown that the underlying statistical distributions of many soil parameters are what we call 'log normally distributions'. What that means in a practical sense is that for many factors like phosphorus or zinc more than 50% of the values are

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Grid sampling *(Continued from page 169)*

less than the mean. A few high testing values can skew the mean and overestimate the true field average. This fact has probably led to more confusion and questioning of soil test credibility and critical levels than any other factor.

This is at the heart of the controversy of whether to stop fertilizing at 15 ppm P or whether to build to 20 ppm to insure better productivity. This was not a major concern in past soil test correlation/calibration research because plot sizes were generally small and homogeneous. So the critical levels developed for soil testing are not the problem. The problem is in dumping a wide range of samples from a field that varied widely and expecting the 'average' to work well.

If a producer feels a field is fairly uniform, bulk sampling may still be adequate. However, we have always suggested dividing fields into smaller areas based on soil type, drainage, topography, or other considerations. This background data is important in sampling and can be used to sample smaller areas on a whole farm management basis and still produce good information for making decisions. Producers must also realize that you don't have to have variable rate application equipment to vary fertilizer application. For example if the field in Fig. 1 had the soil test phosphorus levels shown, Area 1 would not be fertilized, Areas 2 and 3 would be spread once and the applicator could be run over Area 3 one more time. You would have a type of variable rate that we've been able to do since we used a 10-foot Gandy and a Farmall 'H', but few producers took advantage of it. If the field areas sampled are considered to be uniform by the producer or ag consultant then the sampling guidelines in the NebGuide still apply.

With more minimum tillage we may have to do some shallower sampling at 2- to 3-inch depth increments down to 9 or 10 inches to look at pH changes. This may be important for herbicide and lime applications.

The next question is, how should I sample for SSM? There are not a lot of absolute answers right now. There is a lot of discussion in the farm press and on discussion groups on the WWW. (Check out *Agriculture On Line* or some of the other links to sites related to precision farming). Much recent research has focused on sampling intensity. Although there is no single recommended sample spacing, there is some agreement that spacings above 200-250 feet or areas larger than two acres cause significant loss of information. Simply stated, the more points you have, the better the map and the more information you'll have. Most current research also shows that it is better to sample a smaller area (one to two acres) by compositing three to five cores, than it is to take 10 or so cores from a 4- or 5-acre area. This method is called 'point sampling'. An alternative is to take one larger core (2-3 inch diameter) from somewhere in your grid space and analyze it. This is the method we have been using at all of our Nebraska research sites for the past eight years and it seems to be working well.

To make a make a good map, software programs are needed that do 'interpolation' -- that is they estimate soil sample values at unsampled locations. Check with your ag consultant or dealer to see if they have a good program and some way of referencing sampling points either with a GPS or some type of dead reckoning or other measurement system to produce the map.

There are many sampling schemes rather than simply going to the middle of a square that is considered a grid and taking a set of sample points out of the middle. Other schemes include unaligned grids, knights move, triangular patterns, and systematic unaligned sampling strategies. Many software programs can deal with points that are not equally spaced.

If you are just beginning to consider grid sampling, you can see there will be a lot of learning to master the new technology. These topics, along with others including what geographic information systems to use, will be featured at several winter Extension meetings.

Soil sampling has always been a management tool to help you do a better job of getting the most from your fertilizer dollar. Soil sampling for site specific management can greatly improve that process, but it will cost money. There are only a few case studies where the economics have been worked out on the increase in profitability from site specific management.

(Continued on page 173)

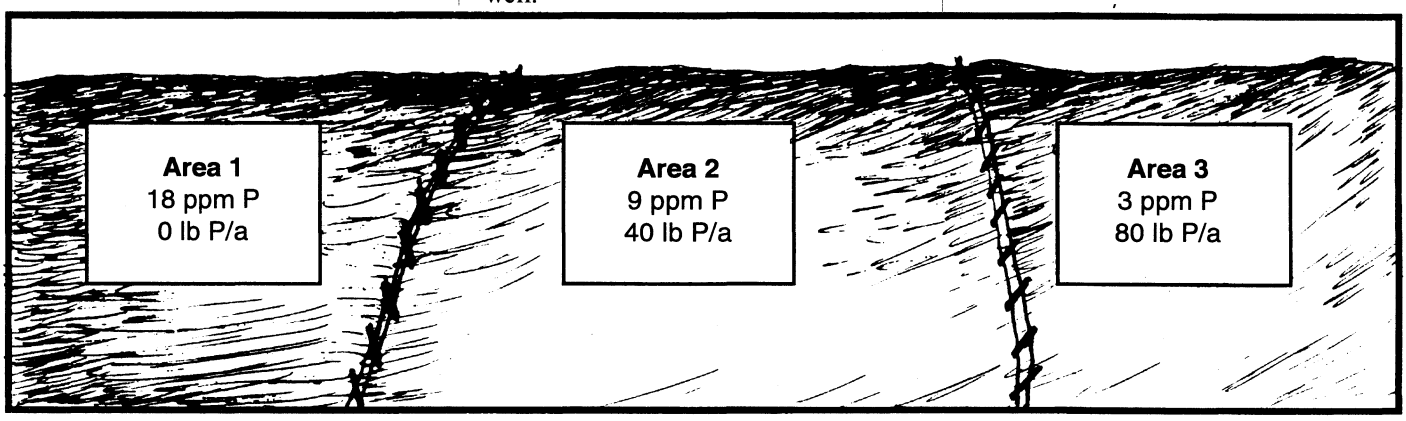


Fig. 1 Example of three different fields tested for phosphorus, as cited in the story.

Managing price risks, grain marketing

The summer of 1996 will be remembered for record prices of feed grains and very attractive prices for wheat and soybeans. Attempts to make those prices last for future crops by rolling "hedge-to-arrive contracts" forward will also be remembered; however, not very favorably. Use of these contracts proved disastrous in 1996.

It's difficult to know whether 1997 will be another year of record prices; however, the market does not seem to suggest it.

Corn prices at Nebraska country elevators were down sharply during the last week of October. Harvest had finally caught up with the shortages that developed by mid- to late-summer when old crop bids traded at a significant premium to new crop prices. Late October bid prices to farms for immediate sale reached the $2.40 per bushel level, well below the $3.00 per bushel harvest time optimism expressed last summer.

The relevant question now is, "How do producers proceed in making marketing decisions for the balance of the record 1996 Nebraska corn crop?" Producers should answer several questions before proceeding with their strategy:

1) What are production costs?

2) What are your cash flow needs now, and over the coming months? and

3) What are your income objectives from this year's crop?

Production costs are the foundation of a marketing plan. They provide the basis for evaluating profitability of pricing decisions. Current price levels, on the other hand, reflect harvest time pressures on the grain handling system. This effect usually lasts until transportation restrictions related to harvest are resolved. Then prices begin to recover. When a producer's cash flow needs demand immediate cash at harvest, realized profit per bushel is compromised. Limit harvest time sales to satisfy immediate cash needs. This advice is particularly appropriate for farmers who had empty, useable on-farm grain storage at the beginning of harvest. (Producers who have grain in storage on the farm or at local elevators need to adjust production costs to include the added expense of storage.)

Next, set pricing goals based on income objectives for the crop and cash flow needs in coming months. Use these targets to make future pricing decisions. The objective is to improve the average price for the crop with future sales decisions. Does this mean you will hit the market high for your crop? The answer is obviously no. More immediate cash flow needs will preclude that happening for most producers.

Don't hesitate to re-evaluate initial pricing goals as the marketing season progresses. None of us has perfect foresight. Make more informed choices, including pricing goals, as time passes. There is reason to expect a price rally as planting season approaches or in early summer. Hopefully, some of the 1996 crop, or alternatively, 1997 crop bushels can be priced then.

Avoid getting involved in complicated pricing schemes which you don't fully understand. No one needs to repeat the unfortunate pricing experiences of 1996.

Finally, the marketing plan is also based on price expectations during coming months. One of the most significant factors to influence price will be U.S. exports of corn. With harvest completed, domestic supply is established. U.S. utilization doesn't change much from year to year. The wild card is exports. Exports were at record levels in 1996. Exports in 1997 will be an important variable. Carryover of this year's crop will exceed 1996 levels but will remain among the smallest in recent years.

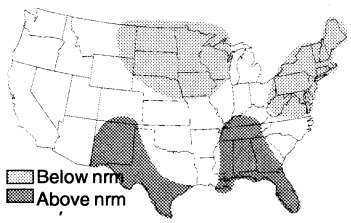
There isn't a magic formula for marketing. It requires discipline and some measure of luck.

Mike Turner, Professor of Agribusiness, Department of Agricultural Economics

Get out your shovels

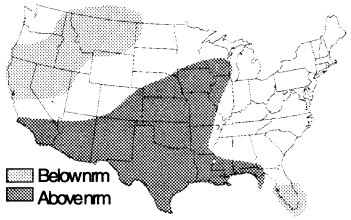
Long range weather outlooks don't hold much promise for a benign winter. Fig. 1 shows the Climate Prediction Center's long lead outlook for November through January. There is a tendency toward below normal temperatures and above normal precipitation for most of Nebraska. An expansive area of above normal precipitation is indicated to fall from the southern High Plains northeastward through the northern Mississippi River valley.

The below normal temperature region indicated in Fig. 1 basically remains unchanged across the north central United States during December-February. The above normal precipitation area shrinks toward the southwest with the northern extent of the forecast covering southern Nebraska.



Nov.-Jan. long range precipitation outlook

The models indicate equal chances of receiving above normal, normal, or below normal precipitation and temperatures from January to April.



Nov.-Jan. long range precipitation outlook

Al Dutcher State Climatologist, Agricultural Meteorology

Lincoln research shows no-till yields best in '96

Interest in conservation tillage systems including no-till grew dramatically in the late 70s. Early adopters of these systems had some concerns about planter performance, early season weed control, and possible yield reductions. In 1981, Elbert Dickey and I established plots on the University of Nebraska Rogers Memorial Farm (10 miles east of Lincoln) to evaluate six tillage systems in a soybean/grain sorghum rotation. We wanted to gain experience in the management required to make no-till and reduced tillage systems successful. I have been maintaining these dryland production plots ever since and have found that with proper management, no-till is the most profitable tillage system.

In the April 5, 1996 issue of *CropWatch,* I advised against tillage, primarily because of the dry spring. With the timely rains that came later, I thought that there would be few differences in yields from various tillage systems. At harvest this fall, I was surprised at the differences in the long-term tillage plots at the Rogers Farm near Lincoln. The yields for each of the tillage systems are given in *Table 1.* (Full plot harvest with a combine and weigh wagon; corrected for moisture.)

Soil probing for moisture at planting indicated that only the no-till plots had a full soil profile (6-foot depth on a silty clay loam). The plots with fall tillage had about 4 to 5 feet of moist soil and the plots with spring tillage had about 4.75 to 5.5 feet. About 15 inches of rain fell during the growing season.

There were visible differences in grain sorghum growth among the tillage systems. The tilled plots were always behind the no-till plots in development (see photo). Grain moisture content at harvest averaged 23% for the two fall tilled treatments and only 18.5 for the two no-till treatments. Very few visible differences were observed in the soybean plots except for a quicker emergence for the no-till treatments.

With the need for residue management for erosion control and moisture conservation, I recommend properly managed no-till for most of our Nebraska producers. With the no-till yield results I had this year, I often question why producers are doing tillage.

Paul Jasa
Extension Engineer

Table 1. Yields for different tillage systems in a soybean/grain sorghum rotation

Tillage System	*Yield, bu/A*	
	Soybeans	*Grain Sorghum*
Fall plow, disk*, disk**	50.9	89.4
Fall chisel, disk**	52.9	87.0
Disk*, disk**	50.9	85.7
Disk**	54.4	103.3
No-till with cultivation	57.1	105.3
No-till without cultivation	57.4	109.1

Fall plow and fall chisel were on Oct. 12 1995, disk* was on April 25, disk** was on May 21, and planting was on May 21. (Dunbar soybeans were planted at 175,000 seeds per acre and Pioneer 8505 grain sorghum was planted at 85,000 seeds per acre, both in 30" rows).

Briefs

Trees for sale

The Nebraska Conservation Tree Program has 38 species of seedling trees available for windbreak development. For a complete list of the species available, see the 96-24 *CropWatch.* Cost is $46 for 100 seedlings with a minimum order of 100. There is a minimum order of 25 seedlings per species.

For more information or to order using a credit card, call 800-600-1573.

Precision Decisions

Don't forget that the **Precision Decisons '96 Conference** is being held in Omaha Monday and Tuesday (Nov. 11-12) at the Holiday Convention Centre. The conference is sponsored by the editors of *Nebraska Farmer* and *Wallaces Farmer* in cooperation with Cooperative Extension at the Unviersity of Nebraska and Iowa State University. Continuing education credits for the Certified Crop Advisor program have been applied for.

Don't forget to complete and return your survey. *Thanks!*

Kearney conferences to address corn production, marketing, and seed issues

Corn Expo

Corn producers can get the latest information on production and marketing issues, view exhibitor displays, and learn how to better manage the economic risks of producing a corn crop at this year's **Nebraska Corn Expo.**

The seminar, sponsored by the University of Nebraska and the Nebraska Corn Growers Association, will be Jan. 28-29 in Kearney at the Buffalo County Exhibit Hall.

Guest speaker, William Tierney, Kansas State University Extension crop marketing specialist, will address the corn market outlook for next year and the next five years. He will review current and expected U.S. and world feed grain supply-demand fundamentals and discuss the outlook for prices.

Tuesday afternoon Tierney will present an Integrated Risk Management (IRM) case problem which allows farmers to learn more about new marketing and insurance tools. Market fluctuations and weather are the biggest risks corn producers face, he says. Crop Revenue Coverage (CRC), other crop insurance instruments, and alternative crop pricing methods give farmers more flexible tools to minimize risk and enhance income. Workshop participants will consider the example and make all important risk management decisions for the 1997 crop using information typically available. The top four performers will received $20. Participants should bring a pencil and calculator.

Tierney's presentations are being sponsored by Rain and Hail Crop Insurance.

Other topics to be addressed by the more than 20 UNL Extension specialists and researchers speaking at the Expo are: corn kernel dry down; 20" row vs 30-36" rows; herbicide resistant corn; manure as a resource; corn plant development; fertilizer management; GPS and site specific management; guidance systems; herbicide mode of action and injury symptoms; insect management including Bt corn; irrigation updates; soil compaction; economics of rotating corn; industrial uses for corn; disease risks; no-till vs. ridge-till; and grain storage.

For more information or to register, contact Ralph Anderson, Extension Educator, 1400 E. 34th St., Kearney, NE 68847-3998. Preregistration is $50 and due by Jan. 17; individuals can register at the door for $65. Attendance at some of the sessions may be limited. The conference will begin at 9 a.m. Tuesday, Jan. 28, with registration, refreshments, booths, and displays and continue through Wednesday afternoon.

Seed Improvement

On Solid Ground, the theme of this year's annual **Nebraska Seed Improvement Conference**, reflects where the industry is after a prosperous season of increased certified seed production across the state.

This year's program, which is sponsored by the Nebraska Seed Trade Association and the Nebraska Crop Improvement Association, will be held Jan. 27-Jan. 29 at the Holiday Inn at Kearney. The conference focuses on issues facing the seed corn industry. Large producers as well as consultants and individuals just interested in learning more about seed corn production are invited.

Among the topics are: Gaucho seed treatment; herbicide resistant crops for effective weed management; evaluating corn insect management technology; corn disease management; relationships between farm management and seed companies; accessing research information and new technologies via the University, World Wide Web, UNL Foundation Seed Division and NCIA Services; managing accounts receivable; and much more. A representative of the American Seed Trade Association will present an update on the national industry. The conference also will include workshops, a trade show, product action sessions, and annual meetings of each of the sponsoring associations.

Registration is required. The conference begins Tuesday morning with a buffet breakfast at 7 a.m. and speakers at 7:30 a.m. and continuing through Tuesday evening with an awards banquet. Meetings and sessions will continue through Wednesday afternoon. For more information contact the Nebraska Seed Improvement Office at (402) 472-1444 or the Nebraska Seed Trade Association at (308) 236-7058. For room reservations, call the Kearney Holiday Inn at 800-652-1909.

Grid soil sampling *(Continued from page 170)*

From data I've reviewed, phosphorus and zinc can be highly variable and in some fields nitrate varies significantly. Our research shows that we can benefit by knowing the variability. In most instances we will not be applying less fertilizer, we will just be putting it in different places to enhance production on parts of the field that weren't producing at their best.

As with most new technologies it is probably good to walk before you run. Begin with a small area, learn from that. Sample more in the second and third years. In five to seven years, more detailed sampling will probably be the norm rather than the exception.

Gary Hergert, West Central Extension Soils Specialist

Winter Extension meetings offer opportunities

Check with your local Extension Educator for meetings near you.

Crop Protection Clinics

These clinics address current issues dealing with crop production and crop pest management, and may vary some from site to site. Registration begins at 8:30 with the programs to begin at 9 a.m. A $17 registration fee includes a noon lunch, proceedings and copy of the 1997 Extension Herbicide Guide. For more information, contact the Extension Educator in the county of the meeting or contact Alex Martin, Extension Weeds Specialist, at (402) 472-1527 or John McNamara, Extension Assistant, Weed Science, at (402) 472-1544.

Jan. 6 Lincoln, Lancaster County Extension Education Center
Jan. 7 Norfolk, Ramada Inn
Jan. 8 Fremont Holiday Lodge
Jan. 9 O'Neill Legion Club
Jan. 10 Broken Bow, Elks Club

Jan. 14 York, Chances "R"
Jan. 15 Hastings, Garden Cafe
Jan. 16 Fairbury, 4-H Building
Jan. 17 Auburn, Arbor Manor

Jan. 21 Scottsbluff, Panhandle REC
Jan. 22 Ogallala, Keith County Exhibit Hall
Jan. 23 Holdrege Agricultural Center

Agronomy Highlights

The theme of this year's annual **Agronomy Research Highlights** meeting is "Agronomy in the Era of Site Specific Agriculture." The meeting, which will be Dec. 17 at the Cornhusker Hotel in Lincoln, features a mini symposium, lectures, poster sessions, demonstrations, and a free meal. Registration and refreshments begin at 8:15, the welcome begins at 8:45.

Registration is necessary so lunch can be arranged. Please phone, mail or fax the names, addresses and affiliations of those who would like to attend to: Department of Agronomy, Box 0915, 279 Plant Science Hall, University of Nebraska, Lincoln, NE 68583-0915; fax, 472-7904; or phone, (402) 472-2811.

Pesticide Applicator Training and Testing

Pesticide Applicator Certification Training and Testing is being held throughout the state in February. Initial commercial/noncommercial certification is based on satisfactory test scores (70%) on a general standards exam plus one or more specific categories, including: agricultural pest control on plants; agricultural pest control on animals; forest pest control; ornamental and turf pest control; aquatic pest control; seed treatment; right-of-way pest control category; structural/health related pest control; public health pest control; wood preservation and treatment; and fumigation. For more information on initial certification or recertification, contact the Nebraska Department of Agriculture, Bureau of Plant Industry, Box 94756, Lincoln, NE 68509-4756; phone: (402) 471-2394 or fax, (402) 471-6892. Your Extension Educator also will have information on local opportunities for training and testing.

Irrigation Shortcourse

The **Central Plains Irrigation Shortcourse** will be held Feb. 5-6 at the D&N Event Center, North Platte. For more information, contact Norman Klocke, (308) 532-3611, or write him at Rt. 4, Box 46A, North Platte, NE, 69101.

Eastern Niobrara EPU

For more information on either of the following programs, contact Terry Gompert, Extension Educator in Knox County, at (402) 288-4224.

A **Dairy Grazing Conference** will be held Wednesday, Jan. 29, at the Bloomfield Community Building. Speakers will include producers and Bruce Anderson, Extension Grazing Specialist, and Rick Grant, Extension Dairy Specialist. Topics will include planting forages and utilizing forages in dairy grazing programs.

A **Corn Grazing Conference** will be held Monday, Feb. 10, at the Bloomfield Community Building. Speakers will include producers and Extension specialists: Dave Baldridge, Bruce Anderson, Terry Gompert, Victoria Mundy. Topics will include planting and utilizing corn in grazing programs.

Southeast Six EPU

Cass, Johnson, Nemaha, Pawnee, Otoe, Richardson counties

For more information on any of these meetings, contact Gerald Hopp, Extension Educator in Richardson County, (402) 245-4324.

CRP: Current Government Procedures, and Pasture Improvements

Jan. 22, 9-11 a.m., Senior Center/ Cafe, Table Rock

Jan. 22, 1:30-3:30 p.m., 4-H Building, Tecumseh

Jan. 23, 9-11 a.m., First National Bank & Trust, Syracuse

Alfalfa Day will be held 11:30 a.m. to 3:30 p.m. Thursday, Jan. 23, at the Legion Club in Humboldt.

Prepare CRP by Prescribed Burning

Feb. 12, 9-11 a.m., Senior Citizen Center/cafe, Table Rock

Feb. 12, 1:30-3:30 p.m., Community Building, Cook

Crop Production Following CRP

Feb. 19, 9-11 a.m., Senior Citizen Center/Cafe, Table Rock

Feb. 19, 1:30-3:30 p.m., Community Building, Cook